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Electrodeposition coating process

Description of Technology: The invention relates to a process for coating electrically conductive substrates with aqueous electrodeposition coating agents.

Patent Listing:

1. **US Patent No. 6,589,411**, Issued July 8, 2003, "Electrodeposition coating process"
http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6589411

Market Potential: Electrodeposition coating agents are in particular used for the production of corrosion protective primers on metallic substrates. After electrodeposition, the electrodeposition coating layers are usually baked.

Electrodeposition primers should exhibit good mechanical properties, especially on external surfaces facing towards an observer, as these surfaces are exposed to external mechanical influences. Electrodeposition primers are intended to protect not only the surfaces, but also the edges of substrates from corrosion. Edge corrosion on edges visible to the observer is particularly aesthetically troublesome, for example, taking the form of visible rust spots and streaks that develop on the coated substrates during use.

It has now been found that electrodeposition coating layers exhibit surprisingly improved mechanical properties if they have been cured by irradiation with near infrared radiation (NIR radiation) instead of by conventional baking. Surprisingly, improved edge corrosion protection may also be achieved with an electrodeposition coating cured in this manner. Both effects may simultaneously be achieved on substrates comprising edges if the electrodeposition coating layer on the surfaces and on the edges of the substrates are cured by means of NIR-irradiation.

Benefits:

- Improved mechanical properties of coating layers
- Improved edge corrosion protection

Applications:

- Corrosion protective primers
- Metallic substrates

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